WHAT IS CLAIMED IS:

1. A diaphragm assembly for being connected between an engine exhaust path and an engine control unit, said diaphragm assembly comprising:

a diaphragm housing; and

a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in flow communication with the engine control unit.

2. A diaphragm assembly in accordance with Claim 1 wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members.

3. A diaphragm assembly in accordance with Claim 2 wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber.

4. A diaphragm assembly in accordance with Claim 1 wherein said first chamber comprises a first volume and said second chamber comprises a second volume, said first volume greater than said second volume.

5. A diaphragm assembly in accordance with Claim 1 wherein said diaphragm comprises an o-ring and a diaphragm member integral with said o-ring.

6. A diaphragm assembly in accordance with Claim 5 wherein said o-ring and said diaphragm member are fluorosilicone.

7. A diaphragm assembly in accordance with Claim 5 wherein said diaphragm housing comprises an o-ring groove for receiving said o-ring.

8. A diaphragm assembly in accordance with Claim 5 wherein said diaphragm housing comprises a first housing member and a second housing member, said first and second housing members each comprising an o-ring groove so that when said housing members are assembled, said diaphragm o-ring is trapped between said first and second housing members in said grooves.

9. An exhaust gas pressure sensing system for being connected between an engine exhaust path and an engine electronic control unit of a marine engine, said system comprising:

a probe for being secured to the marine engine and configured to extend into the engine exhaust path; and

a diaphragm assembly in flow communication with said probe and coupled between said probe and the engine electronic control unit.

10. An exhaust gas pressure sensing system in accordance with Claim 9 wherein said diaphragm assembly comprises:

a diaphragm housing; and

a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in flow communication with the engine control unit.

11. An exhaust gas pressure sensing system in accordance with Claim 10 wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members.

12. An exhaust gas pressure sensing system in accordance with Claim 11 wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber.

13. An exhaust gas pressure sensing system in accordance with Claim 10 wherein said first chamber comprises a first volume and said second chamber comprises a second volume, said first volume greater than said second volume.

14. An exhaust gas pressure sensing system in accordance with Claim 10 wherein said diaphragm comprises an o-ring and a diaphragm member integral with said o-ring.

15. An exhaust gas pressure sensing system in accordance with Claim 9 wherein said probe comprises an elongate probe body, and an engine engagement assembly secured to said probe body and configured to engage to the engine so that said probe body at least partially extends into the engine exhaust path.

16. An exhaust gas pressure sensing system in accordance with Claim 15 wherein said elongate probe body comprises a hollow, cylindrical shaped member having at least one opening through a side wall of said cylindrical shaped member.

17. An exhaust gas pressure sensing system in accordance with Claim 16 wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening.

18. An exhaust gas pressure sensing system in accordance with Claim 15 wherein said elongate probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member.

19. An exhaust gas pressure sensing system in accordance with Claim 15 further comprising a pellet located within said cylindrical shaped member.

20. An exhaust gas pressure sensing system in accordance with Claim 15 wherein said engine engagement assembly comprises a threaded portion sized to be threadedly engaged within an opening in flow communication with the engine exhaust path, and a tube connection portion sized to be inserted within a tube.

21. A method for securing a diaphragm assembly to an engine, said method comprising the steps of:

coupling an inlet of the diaphragm assembly in flow communication with an exhaust path of the engine; and

coupling an outlet of the diaphragm assembly to an electronic control unit of the engine.

22. A method in accordance with Claim 21 wherein coupling an inlet of the diaphragm assembly in flow communication with an exhaust path of the engine comprises the steps of:

at least partially inserting a probe through an opening in the engine;

securing the probe in place so that at least a portion of the probe extends into an exhaust path of the engine;

engaging one end of a tube to the probe so that during engine operation, exhaust pulses sensed by the probe are transmitted through the probe to the tube; and

engaging a second end of the tube to the inlet of the diaphragm assembly.

23. A method in accordance with Claim 22 wherein securing the probe in place comprises the step of threadedly engaging the probe within an opening in the engine.

24. Apparatus for sensing changes in exhaust gas pressure during engine operation, said apparatus comprising diaphragm means configured to be coupled between an exhaust path of the engine and an engine control unit and for transmitting exhaust pulses to the control unit.

25. Apparatus in accordance with Claim 24 wherein said diaphragm means comprises a diaphragm housing, and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in flow communication with the engine control unit.

26. Apparatus in accordance with Claim 25 wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members.

27. Apparatus in accordance with Claim 25 wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber.

28. Apparatus in accordance with Claim 24 further comprising probe means for sensing exhaust gas pressure during engine operation, and engagement means secured to said probe means for securing said probe so that said

probe at least partially extends within an exhaust path of the engine during engine operation.

29. Apparatus in accordance with Claim 28 wherein said probe means comprises an elongate probe body comprising a hollow, cylindrical shaped member.

30. Apparatus in accordance with Claim 29 wherein said cylindrical shaped member comprises at least one opening through a side wall of said cylindrical shaped member.

31. Apparatus in accordance with Claim 30 wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening.

32. Apparatus in accordance with Claim 29 wherein said elongate probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member.

33. Apparatus in accordance with Claim 28 further comprising a pellet located within said probe means.

34. Apparatus in accordance with Claim 33 wherein said pellet comprises sintered metal.

35. Apparatus in accordance with Claim 28 wherein said engagement means comprises an engine engagement assembly secured to said probe means and configured to engage to the engine so that said probe means at least partially extends into the engine exhaust path.

36. Apparatus in accordance with Claim 35 wherein said engine engagement assembly comprises a threaded portion sized to be threadedly engaged within an opening in flow communication with the engine exhaust path.

37. A engine comprising:

a powerhead;

an exhaust housing extending from said power head;

a lower unit extending from said exhaust housing;

an exhaust path extending from said power head and through said exhaust housing and said lower unit; and

a diaphragm assembly in flow communication with said exhaust path and coupled to an engine control unit.

38. An engine in accordance with Claim 37 wherein said diaphragm comprises a diaphragm housing, and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in flow communication with the engine control unit.

39. An engine in accordance with Claim 38 wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members.

40. An engine in accordance with Claim 39 wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber.

41. An engine in accordance with Claim 38 wherein said diaphragm comprises an o-ring and a diaphragm member integral with said o-ring.

42. An engine in accordance with Claim 37 further comprising a probe comprising an elongate probe body, and an engine engagement assembly secured to said probe body and engaged relative to said exhaust path so that said probe body at least partially extends into said engine exhaust path.

43. An engine in accordance with Claim 42 wherein said elongate probe body comprises a hollow, cylindrical shaped member comprising a side wall and at least one opening through said side wall.

44. An engine in accordance with Claim 43 wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening.

45. An engine in accordance with Claim 43 wherein said elongate probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member.

46. An engine in accordance with Claim 43 further comprising a pellet located within said cylindrical shaped member.

47. A kit for a marine engine, comprising a diaphragm assembly comprising a diaphragm housing, and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with an engine control unit, and said second chamber configured to be in flow communication with an engine exhaust path.

48. A kit in accordance with Claim 47 wherein said diaphragm housing comprises a first housing member and a second housing member, said diaphragm between said first and second housing members.

49. A kit in accordance with Claim 48 wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber.

50. A kit in accordance with Claim 47 wherein said first chamber comprises a first volume and said second chamber comprises a second volume, said first volume greater than said second volume.

51. A kit in accordance with Claim 47 wherein said diaphragm comprises an o-ring and a diaphragm member integral with said o-ring.

52. A kit in accordance with Claim 47 further comprising a probe for being secured to the marine engine, said probe comprising an elongate probe body, and an engine engagement assembly secured to said probe body and configured to engage to the engine so that said probe body at least partially extends into the engine exhaust path.

53. A kit in accordance with Claim 52 wherein said elongate probe body comprises a hollow, cylindrical shaped member comprising at least one opening through a side wall of said cylindrical shaped member.

54. A kit in accordance with Claim 53 wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening.

55. A kit in accordance with Claim 52 wherein said elongate probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member.

56. A kit in accordance with Claim 52 further comprising a pellet located within said probe body.

57. A kit in accordance with Claim 56 wherein said pellet comprises sintered metal.